

CLAIMS:

1. An optical attenuator for attenuating the intensity of an input light beam, comprising

5 a scattering element for scattering the input light beam into a range of scattering directions, and

a beam collecting device arranged in the range of scattering directions for collecting a portion of the scattered light as an output beam,

10 wherein the attenuation of the output beam with respect to the input light beam is dependent on the portion of the collected light relative to the range of scattering directions, and

the scattering element is provided with a varying scattering angle distribution in order to control the attenuation.

2. The optical attenuator of claim 1, further comprising a beam distributor for providing the input light beam as a substantially parallel beam to the scattering element.

3. The optical attenuator of claim 1, wherein the particle size and distribution is selected for minimizing wavelength dependency.

4. The optical attenuator of claim 1, further comprising a shielding casing, at least in the range of scattering directions.

6. The optical attenuator of claim 1, wherein the scattering element has a wedge-shape and/or the effective thickness of the scattering element is varied in the optical path.

7. The optical attenuator of any one of claim 1, further comprising a device for moving the scattering element in order to vary the attenuation.

8. The optical attenuator of claim 1, wherein the scattering element comprises a gradient of density of scattering particles and/or a varying surface scattering angle distribution.

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9. A method for attenuating the intensity of an input light beam, comprising the steps of:

(a) scattering the input light beam into a range of scattering directions,

(b) varying scattering angle distribution in order to control the attenuation, and

(c) collecting a portion of the scattered light as an output beam.

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